

## SEQUENCE LISTING

### (1) GENERAL INFORMATION:

(i) **APPLICANT:** Gudkov, Andrei  
Roninson, Igor B.

(ii) **TITLE OF INVENTION:** Genes And Genetic Elements Associated  
With Sensitivity To Chemotherapeutic Drugs

(iii) **NUMBER OF SEQUENCES:** 22

#### (iv) **CORRESPONDENCE ADDRESS:**

- (A) **ADDRESSEE:** Allegretti & Witcoff, Ltd.
- (B) **STREET:** 75 State Street
- (C) **CITY:** Boston
- (D) **STATE:** Massachusetts
- (E) **COUNTRY:** U.S.A.
- (F) **ZIP:** 02109

#### (v) **COMPUTER READABLE FORM:**

- (A) **MEDIUM TYPE:** Floppy disk
- (B) **COMPUTER:** IBM PC compatible
- (C) **OPERATING SYSTEM:** PC-DOS/MS-DOS
- (D) **SOFTWARE:** PatentIn Release #1.0, Version #1.25

#### (vi) **CURRENT APPLICATION DATA:**

- (A) **APPLICATION NUMBER:**
- (B) **FILING DATE:**
- (C) **CLASSIFICATION:**

#### (viii) **ATTORNEY/AGENT INFORMATION:**

- (A) **NAME:** Keown, Wayne A.
- (B) **REGISTRATION NUMBER:** 33,923
- (C) **REFERENCE/DOCKET NUMBER:** 93,354

#### (ix) **TELECOMMUNICATION INFORMATION:**

- (A) **TELEPHONE:** 617/345-9100
- (B) **TELEFAX:** 617/345-9111

### (2) **INFORMATION FOR SEQ ID NO:1:**

#### (i) **SEQUENCE CHARACTERISTICS:**

- (A) **LENGTH:** 163 base pairs
- (B) **TYPE:** nucleic acid
- (C) **STRANDEDNESS:** single
- (D) **TOPOLOGY:** linear

(ii) **MOLECULE TYPE:** cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: YES

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GTGTCTGGGC GGAGCAAAAT ATGTTCCAAT TGTGTTTTCT TTTGATAGAT TCTTTCAACA 60  
GACAGTCTTT TCTTAGCATC TTCATTTTTC TTTATTTTGT TGACTTGCAAT ATTTTCATTT 120  
ACAGGCTGCA ATGGTGACAC TTCCATGGTG ACGGTCGTGA AGGG 164

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 213 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

TGAAAAGATG TATGTCCCAG CTCTCATATT TGGACAGCTC CTAAGTTCTA GTAAGTATGA 60  
TGATGATGAA AAGAAAGTGA CAGGTGGTCG AAATGGCTAT GGAGCCAAAT TGTGTAACAT 120  
ATTCAGTACC AAATTTACTG TGGAAACAGC CAGTAGAGAA TACAAGAAAA TGTTCAAACA 180  
GACATGGATG GATAATATGG GAAGAGCTGG TGA 213

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 181 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GCCATTGGT CAGTTTGGTA CCAGGCTACA TGGTGGCAAG GATTCTGCTA GTCCACGATA 60  
CATCTTTACA ATGCTCAGCT CTTTGGCTCG ATTGTTATTT CCACCAAAAC ATGATCACAC 120  
GTTGAAGTTT TTATATGATG ACAACCAGCG TGTGAGCCT GAATGGTACA TTCCTATTAT 180  
T 181

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 180 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

TGAATGGTAC ATTCCTATTA TTCCCATGGT GCTGATAAAT GGTGCTGAAG GAATCGGTAC 60  
TGGGTGGTCC TGCAAAATCC CCAACTTTGA TGTGCGTGAA ATTGTAAATA ACATCAGGCG 120  
TTTGATGGAT GGAGAAGAAC CTTTGCCAAT GCTTCCAAGT TACAAGAACT TCAAGGGTAC 180  
TATTGAAGAA CTGGCTCCAA ATCAATATGT GATTAGTGGT GAAG 224

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 329 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

TGCGTGAAAT TGTAATAAC ATCAGGCGTT TGATGGATGG AGAAGAACCT TTGCCAATGC 60  
TTCCAAGTTA CAAGAACTTC AAGGGTACTA TTGAAGAACT GGCTCCAAAT CAATATGTGA 120  
TTAGTGGTGA AGTAGCTATT CTTAATTCTA CAACCATTGA AATCTCAGAG CTTCCCGTCA 180  
GAACATGGAC CCAGACATAC AAAGAACAAG TTCTAGAACC CATGTTGAAT GGCACCGAGA 240  
AGACACCTCC TCTCATAACA GACTATAGGG AATACCATAC AGATACCACT GTGAAATTTG 300  
TTGTGAAGAT GACTGAAGAA AACTGGCA 329

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 193 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: YES

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CACTCTTTTC AGTTTCCTTT TCGTTGTCAC TCTCTTCATT TTCTTCTTCA TCTGGAACCT 60  
TTTGCTGGGC TTCTTTCCAG GCCTTCACAG GATCCGAATC ATATCCCCTC TGAATCAGAA 120  
CTTTAATTAA TTCTTTCTTA GGCTTATTTT CAATGATTAT TTTGCCATCT ATTTTCTCAT 180  
AGATAAAGCG AGCC 194

**(2) INFORMATION FOR SEQ ID NO:7:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 180 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** YES

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:7:

TCTGCCTCTG CTTTCATTTT TATGGTTATT CGTGGAATGA CTCTTTGACC ACGCGGAGAA 60  
GGCAAAACTT CAGCCATTTG TGTTTTTTTC CCCTTGGCCT TCCCCCTTT CCCAGGAAGT 120  
CCGACTTGTT CATCTTGTTT TTCCTTGGCT TCAACAGCCT CCAATTCTTC AATAAATGTA 180  
GCCAAGTCTT CTTTCCACAA ATCTGA 206

**(2) INFORMATION FOR SEQ ID NO:8:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 194 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** YES

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:8:

GACACGACAC TTTTCTGTGG TTTCAGTTCT TTGTTACTAA GTTTTGGGGA AGTTTTGGTC 60  
TTAGGTGGAC TAGCATCTGA TGGGACAAAA TCTTCATCAT CAGTTTTTTC ATCAAAATCT 120  
GAGAAATCTT CATCTGAATC CAAATCCATT GTGAATTTTG TTTTGTGTC TGCTCTCCGT 180  
GGCTCTGTTT CTCG 194

**(2) INFORMATION FOR SEQ ID NO:9:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 242 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:9:

CTGAAACCAC AGAAAAGTGT CGTGTCTCAGAC CTTGAAGCTG ATGATGTTAA GGGCAGTGTA 60  
CCACTGTCTT CAAGCCCTCC TGCTACACAT TTCCAGATG AAAGTCAAAT TACAAACCCA 120  
GTTTCCTAAAA AGAATGTGAC AGTGAAGAAG ACAGCAGCAA AAAGTCAGTC TTCCACCTCC 180  
ACTACCGGTG CCAAAAAAAG GGCTGCCCCA AAAGGAACTA AAAGGGATCC AGCTTTGAAT 240  
TC

242

**(2) INFORMATION FOR SEQ ID NO:10:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 341 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:10:

AACCAGCGTG TTGAGCCTGA ATGGTACATT CCTATTATTC CCATGGTGCT GATAAATGGT 60  
GCTGAAGGAA TCGGTACTGG GTGGTCCTGC AAAATCCCCA ACTTTGATGT GCGTGAAATT 120  
GTAAATAACA TCAGGCGTTT GATGGATGGA GAAGAACCTT TGCCAATGCT TCCAAGTTAC 180

AAGAACTTCA AGGGTACTAT TGAAGAACTG GCTCCAAATC AATATGTGAT TAGTGGTGAA 240  
 GTAGCTATT CTTAATTCTAC AACCATTGAA ATCTCAGAGC TTCCCGTCAG AACATGGACC 300  
 CAGACATACA AAGAACAAGT TCTAGAACCC ATGTTGAATG G 341

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 220 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: YES

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

AATTCAAAGC TGGATCCCTT TTAGTTCCTT TTGGGGCAGC CCTTTTTTTTG GCACCGGTAG 60  
 TGGAGGTGGA AGACTGACTT TTTGCTGCTG TCTTCTTCAC TGTCACATTC TTTT TAGGAA 120  
 CTGGGTTTGT AATTTCA GTT TCATCTGGGA AATGTGTAGC AGGAGGGCTT GAAGACAGTG 180  
 GTACACTGCC CTTAACATCA TCAGCTTCAA GGTCTGACAC 220

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2389 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

**(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:**

GTGTTGAGCC TGAATGGTAC ATTCCTATTA TTCCCATGGT GCTGATAAAT GGTGCTGAAG 60  
GAATCGGTAC TGGGTGGTCC TGCAAAATCC CCAACTTTGA TGTGCGTGAA TTGTAAATA 120  
ACATCAGGCG TTTGATGGAT GGAGAAGAAC CTTTGCCAAT GCTTCCAAGT 170

**(2) INFORMATION FOR SEQ ID NO:13:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

**(ii) MOLECULE TYPE: cDNA**

**(iii) HYPOTHETICAL: NO**

**(iv) ANTI-SENSE: NO**

**(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:**

AATCATCGAT GGATGGATGG 20

**(2) INFORMATION FOR SEQ ID NO:14:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

**(ii) MOLECULE TYPE: cDNA**

**(iii) HYPOTHETICAL: NO**

**(iv) ANTI-SENSE: YES**

**(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:**

CCATCCATCCATCGATGATTAAA 23



**(2) INFORMATION FOR SEQ ID NO:15:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 327 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** YES

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:15:

```
CTTGATCCCT TCTGGTTGAT GCCAGAAGCT CTTCTGATC CAGCATTTGT ATCTTCAATT 60
TCTCTACCAA TTGGCTTTGT TGGTTAATCT CTTTCATCCTT GTCATCAAGT TGTTTATACA 120
ATTAGCAAG TTCTTCTTCA CACTTTCTTC TTTCAGCATC GGTAATACTA CCAGCCATTC 180
CGACTGCAGC AGCTGGTTTA TCACTGGTAA TAGCAATATC TTTATCCGCT GTGAAGGCTT 240
CCAAATTAGC TTTCTCTTTG TCAAACGTCT CATCAATAGG CACTGTCTCC CCGTTACGCC 300
AACGGTTTAG CTCGTTTTCC AGCCACT 327
```

**(2) INFORMATION FOR SEQ ID NO:16:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 250 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:16:

```
CCGACCGGGA GCGGGAGAAG GAGCGGGAGC GGGAGCAGCG GGAGAAGGAG CGGGAGAAGG 60
AGCTGGAGCG CGACGGGAGA AGGAACGGGA GCGCGAGCTG GAGCGGCAGC GGGAGCAGCG 120
```

GGCGAGGGAG AAGGAGCTGC TGGCTGCCAA GGCCTTAGAG CCCACCACCT TCCTGCCTGT 180  
 GGCCGAGCTG CACGGACTCC GAGGTCACAG CACGGAGGAG CGGCCCAAGC CCTCGGAGCA 240  
 GCTGACCCCA 250

**(2) INFORMATION FOR SEQ ID NO:17:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 208 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** NO

**(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:**

CTCAGAGGTG ATCCTCTCGG AGTCGAGCTC AGGAGAAGGA GTCCCCTTCT TTGAGACTTG 60  
 GATGCAGACC TGCATGTCCG AGGAGGGCAA GATTTTGAAC CCTGACCATC CCTGCTTCCG 120  
 CCCTGACTCC ACCGAAGTCG AGTCCTTGGT GGCCCTGCTC AACAACTCTT CAGAGATGAA 180  
 GCTAGTACAG ATGAAGTAGC ACGAGGCC 208

**(2) INFORMATION FOR SEQ ID NO:18:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 2389 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(iv) ANTI-SENSE:** NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

CGACAAACAT CATCTGGGAA GACCCACACG ATGGAGGGTA AACTTCATGA TCCAGAAGGC 60  
ATGGGAATTA TTCCAAGAAT AGTGCAAGAT ATTTTAAATT ATATTTACTC CATGGATGAA 120  
AATTTGGAAT TTCATATTAA GGTTTCATAT TTTGAAATAT ATTTGGATAA GATAAGGGAC 180  
TTGTTAGATG TTTCAAAGAC TAACCTTTCA GTCCATGAAG AAAAAACCG TGTTCCTAT 240  
GTAAAGGGGT GCACAGAACG TTTCGTGTGT AGTCCAGATG AAGTCATGGA TACCATAGAT 300  
GAAGGGAAAT CCAACAGAGA TGTCGCAGTT ACAAATATGA ATGAACATAG CTCTAGGAGC 360  
CACAGCATAT TTCTTATTAA TGTA AAAACA GAGAATACAC AAACGGAACA GAAACTCAGT 420  
GGAAAGCTTT ATCTGGTTGA TTTAGCTGGC AGTGAGAAGG TTAGTAAGAC TGGGGCTGAA 480  
GGTGCTGTGC TGGATGAAGC TAAGAACATC AAGAAGTCAC TTTCTGCACT TGGAAATGTC 540  
ATTTCTGCTT TGGCAGAGGG CAGTACCTAT GTTCCTTATC GAGATAGTAA AATGACCAGA 600  
ATTCTTCAAG ATTCATTAGG TGGCAACTGT AGGACCACTA TTGTCATATG CTGCTCTCCA 660  
TCATCATACA ATGAGTCTGA GACAAAGTCA AACTCCTCT TTGGTCAAAG GGCCAAAACA 720  
ATTAAGAACA CAGTCTGTGT CAATGTAGAG TTAAGTGCAG AGCAGTGGAA AAAGAAGTAT 780  
GAAAAAGAAA AGGAAAAAAA TAAGACTCTA CGGAACACTA TTCAGTGGCT GGAAAACGAG 840  
CTAAACCGTT GCGTAACGG GGAGACAGTG CCTATTGATG AGCAGTTTGA CAAAGAGAAA 900  
GCTAATTTGG AAGCCTTCAC AGCGGATAAA GATACTGCTA TTACCAGTGA TAAACCAGCT 960  
GCTGCAGTCG GAATGGCTGG TAGTTTTACC GATGCTGAAA GAAGAAAGTG TGAAGAAGAA 1020  
CTTGCTAAAT TGTATAAACA GCTTGATGAC AAGGATGAAG AGATTAACCA ACAAAGCCAA 1080  
TTGGTAGAGA AATTGAAGAC ACAAATGCTG GATCAGGAAG AGCTTCTGGC ATCAACCAGA 1140  
AGGGATCAAG ATAATATGCA AGCTGAACTG AATCGCCTCC AAGCAGAAAA TGATGCTTCT 1200  
AAAGAAGAAG TCAAAGAAGT TTTACAGGCC TTAGAGGAAC TGGCTGTAA TTATGATCAG 1260  
AAGTCTCAGG AAGTTGAAGA CAAAACAAAG GAATATGAAT TGCTTAGTGA TGAATTGAAT 1320  
CAAAAATCTG CAACTTTAGC AAGTATTGAT GCTGAGCTTC AGAAGCTGAA GGAAATGACC 1380  
AACCACCAGA AGAAACGAGC AGCTGAAATG ATGGCATCAT TATTA AAAAGA CCTTGCAGAA 1440  
ATAGGAATTG CTGTGGGGAA TAACGATGTG AAGCAACCAG AAGGAACTGG TATGATAGAT 1500

GAAGAGTTTA CTGTTGCAAG ACTCTACATT AGCAAAATGA AATCAGAAGT AAAGACCATG 1560  
 GTGAAACGCT GCAAACAGCT AGAAAGCACG CAGACTGAGA GCAACAAAAA AATGGAAGAA 1620  
 AATGAGAAAG AGTTAGCAGC ATGCCAGCTT CGGATCTCCC AACATGAAGC CAAAATCAAG 1680  
 TCACTGACTG AGTACCTTCA GAATGTAGAA CAAAAGAAGA GGCAGCTGGA GGAATCTGTT 1740  
 GATTCCCTTG GTGAGGAGCT AGTCCAATC CGAGCACAAAG AGAAAGTCCA TGAAATGGAA 1800  
 AAAGAGCACT TGAACAAGGT TCAGACTGCA AATGAAGTCA AGCAAGCTGT TGAGCAGCAG 1860  
 ATCCAGAGTC ACAGAGAAAC CCACCAAAAA CAAATCAGTA GCTTGCGAGA TGAAGTTGAG 1920  
 GCAAAGGAAA AGCTAATCAC TGACCTCCAA GACCAAAACC AGAAGATGGT GTTGGAGCAG 1980  
 GAACGGCTAA GGGTGGAGCA TGAGAGGCTG AAGGCTACAG ACCAAGAGAA GAGCAGGAAG 2040  
 CTGCATGAGC TCACGGTTAT GCAAGACAGA CGAGAACAAG CAAGACAAGA CTTGAAGGGT 2100  
 TTGGAGGAGA CCGTGGCAAA AGAACTTCAG ACTTTACACA ACCTGCGTAA GCTCTTTGTT 2160  
 CAGGACTTGG CTACCAGGGT GAAAAAGAGG CCGAGGTCGA CTCTGACGAC ACTGGCGGCA 2220  
 GTGCTGCACA GAAGCAGAAA ATCTCCTTCC TTGAAAACAA CTTGAACAG CTCACCAAAG 2280  
 TGCACAAGCA GTTGGTACGT GATAATGCAG ATCTTCGCTG TGAGCTTCCT AAGTTAGAGA 2340  
 AACGGCTTAG AGCTACTGCA GAAAGAGTGA AAGCTTTGGA GTCAGCCCG 2389

**(2) INFORMATION FOR SEQ ID NO:19:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 20 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:19:

AGTGGCTGGA AAACGAGCTA

20

**(2) INFORMATION FOR SEQ ID NO:20:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 20 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:20:

**CTTGATCCCT TCTGGTTGAT**

**20**

**(2) INFORMATION FOR SEQ ID NO:21:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 20 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:21:

**AGTGGCTTGA AAATGAGCTC**

**20**

**(2) INFORMATION FOR SEQ ID NO:22:**

**(i) SEQUENCE CHARACTERISTICS:**

- (A) LENGTH:** 21 base pairs
- (B) TYPE:** nucleic acid
- (C) STRANDEDNESS:** single
- (D) TOPOLOGY:** linear

**(ii) MOLECULE TYPE:** cDNA

**(iii) HYPOTHETICAL:** NO

**(xi) SEQUENCE DESCRIPTION:** SEQ ID NO:22:

**CTTGATCCCT TCTGGTAGAT G**

**21**

CTTGATCCCT TCTGGTAGAT G